FACTSHEET

Veterinary Services

United States Department of Agriculture

Animal and Plant Health Inspection Service

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Environmental Practices/Management by U.S. Pork Producers

Environmental management is an integral part of the pork production system. Key factors in the success of today's pork producers are management of manure, water, soil conservation, and air. **Manure management on pork operations has become recognized as a significant factor in protecting the natural environment and maintaining overall acceptance of pork.**

During the summer of 1995, the USDA's National Animal Health Monitoring System (NAHMS) contacted pork producers in 16 states[1] as part of the Swine '95 study. The herds in these states represented 91 percent of the United States hog inventory. Information collected during the study provided an overview of environmental practices by United States pork producers.

Environmental Programs

Concerns or regulations about environmental quality led many producers to change or develop management schemes during the 5 years prior to the Swine '95 study. Nearly 21 percent of the producers stated they changed or developed manure management programs (Figure 1).

Nearly 53 percent of producers *that marketed 10,000 or more hogs* from December 1, 1994, to May 31, 1995, changed their manure management, and 36.0 percent changed their dust control programs during the 5-year period. Many of these operations also changed their programs for monitoring groundwater, surface water, and air quality (14.7, 18.8, and 9.8 percent, respectively). These changes and those shown for employee training programs indicate a growing producer awareness of responsible environmental management.

Figure 1

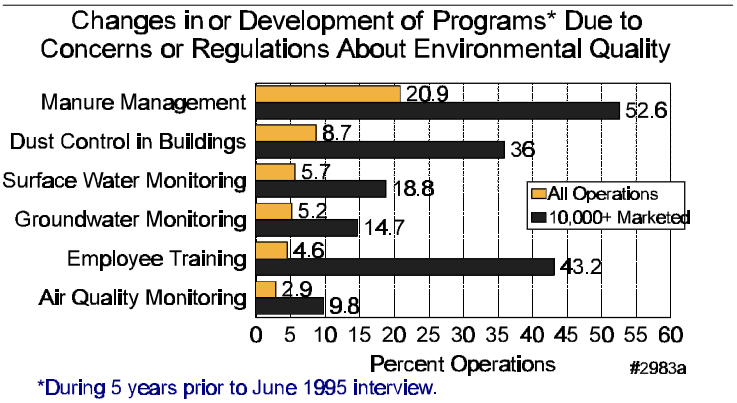
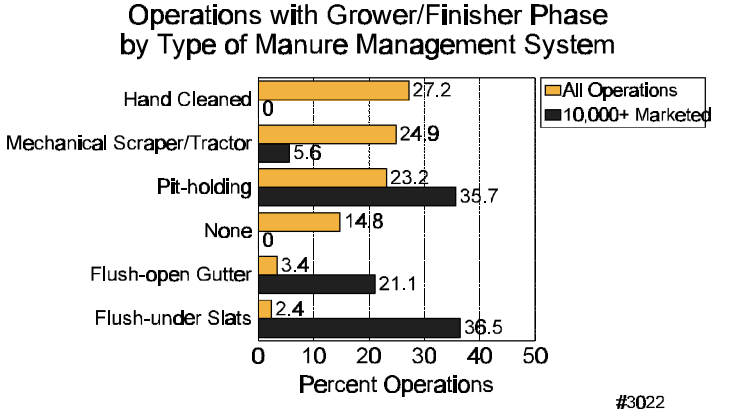


Figure 2



Manure Collection

The type of manure management system used most often depends on the size and type of facility on the farm. Hand cleaning was the most common method of manure management utilized in the grower/finisher phase of production (Figure 2). The same is true of operations with a

1 Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Carolina, Ohio, Pennsylvania, South Dakota, Tennessee, and Wisconsin.

farrowing phase. A mechanical scraper/tractor was the second most common system on operations with grower/finisher pigs. Pit-holding was used most commonly by operations in the nursery and was the second most common method used in the farrowing phase. In operations that marketed 10,000 or more head, pit holding and flushing were more common than scrapers or hand cleaning.

Fourteen percent of all operations reported no manure management system in their farrowing operation, and 4.0 percent reported none in the nursery. Nearly 15 percent of operations reported no manure management system in the grower/finisher phase. Of the latter operations, 85.9 percent had a total inventory of 600 pigs or fewer and housed grower/finisher pigs in facilities with access to lots or pastures. **Less than one percent of the operations with more than 2,500 pigs on inventory reported no manure management system used in the grower/finisher area.**

The information presented below pertains to those producers who had 300 or more grower/finisher hogs, rather than all swine operations as previously discussed.

Manure Storage

Manure was stored by various means before application, and some producers used more than one system. Figure 3 shows that the below-floor slurry, or deep pit, method was used by 49.4 percent of operations. Over 20 percent of the grower/finisher operations used *un*covered anaerobic lagoons, and 19.4 percent used *below-ground* slurry storage.

Most common among operations *of 10,000 or more head marketed* were below-floor slurry pits (53.4 percent) and anaerobic lagoons without covers (76.2 percent.)

Manure Disposal

Over 96 percent of grower/finisher operations did not separate manure for disposal.

Nearly 98 percent of operations with 300 or more grower/finisher hogs disposed of manure on land owned or rented by the operation. Just over 4 percent gave some away. Not quite 1.0 percent sold manure, and 0.5 percent paid someone to take it.

When manure was disposed of on land owned or rented by the operation, 57.8 percent of these operations used a broadcast/solid spreader method of disposal (Figure 4.) For slurry use, 46.0 percent used surface application methods and 21.9 percent subsurface application. Subsurface applications prevent enviromental odor problems and are less likely to cause surface water contamination.

Figure 3

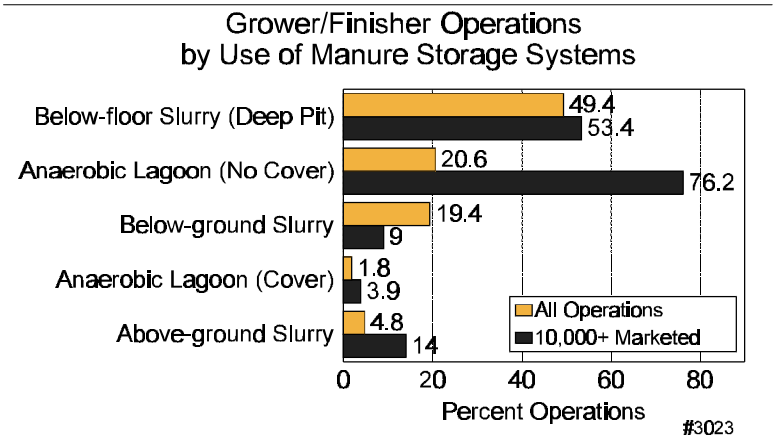
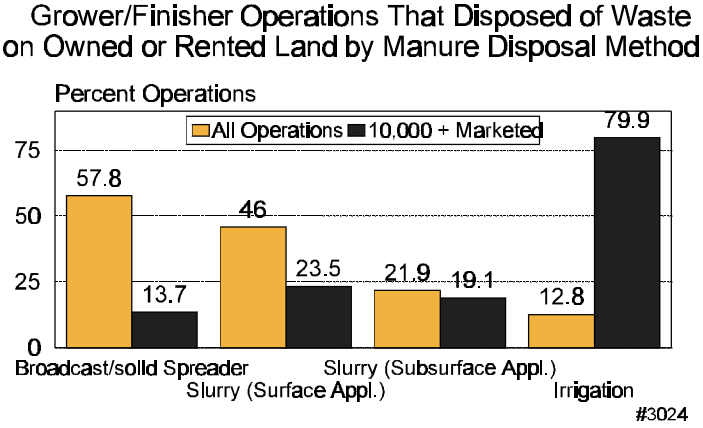


Figure 4



Operations with more than 10,000 pigs marketed were more likely to irrigate manure (79.9 percent) and less likely to broadcast with a spreader (13.7 percent).

The goal of most pork producers is an environmentally friendly method of manure management and disposal that retains valuable soil nutrients.

NAHMS collaborators on the Swine '95 study included the National Agricultural Statistics Service (USDA); State and Federal Veterinary Medical Officers and Animal Health Technicians; and the National Veterinary Services Laboratories (USDA:APHIS:VS).

Other information from the Swine '95 is available on biosecurity, vaccination practices, and antibiotic usage. For more information on these topics or the study in general, contact:

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Antibiotic Usage in Premarket Swine

Pork producers and other consumers are becoming increasingly aware of food safety concerns such as antibiotic residues in products.

The National Pork Producers Council (NPPC) has developed the Pork Quality Assurance (PQA) program to help producers avoid antibiotic residues in pork by emphasizing good management in handling and use of animal health products on the swine operation. To prevent antibiotic residues, the industry is working diligently to encourage producers to identify animals treated at a late finishing stage and observe proper withdrawal times prior to marketing.

The purpose of the National Animal Health Monitoring System's (NAHMS) Swine '95: Grower/Finisher study was to compile national information on animal health and food safety in pork production. Beginning in the summer of 1995, NAHMS contacted 418 pork producers with 300 or more market hogs in 16 of the primary hog-producing states.[1] Herds in the selected states represented 91 percent of the grower/finisher hogs produced in the United States and provided an overview of antibiotic management in premarket swine.

Antibiotic Usage in 1995

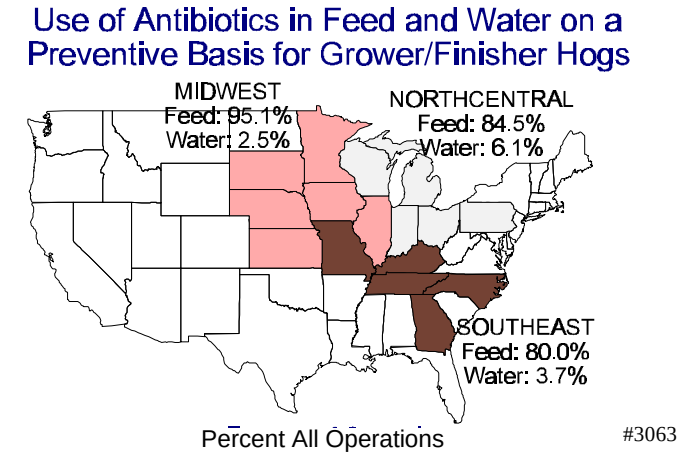
The study indicated 92.7 percent of all grower/finisher *pigs* received antibiotics in their diets at some time during the grower/finisher period.

Swine '95 results indicated that, for disease prevention or growth promotant purposes, pork producers used feed antibiotics much more commonly than antibiotics administered in water. Ninety-one percent of *all operations* used antibiotics in feed on a preventive basis during the grower/finisher phase of production. Only 3.2 percent of the operations administered antibiotics in water during the same production phase.

Narrowing in on operations that are *best described as farrow-to-finish*, 89.5 percent used antibiotics on a preventive basis in feed, and 1.7 percent delivered them in water. **The percentages for operations classified as *grower/finisher only* were 97.4 percent for feed and 10.1 percent for water.**

Regionally, use of antibiotics in feed varied from 80.0 percent in the Southeastern region to 95.1 percent in the Midwest (Figure 1). More operations in the Northcentral region delivered antibiotics in water.

Figure 1



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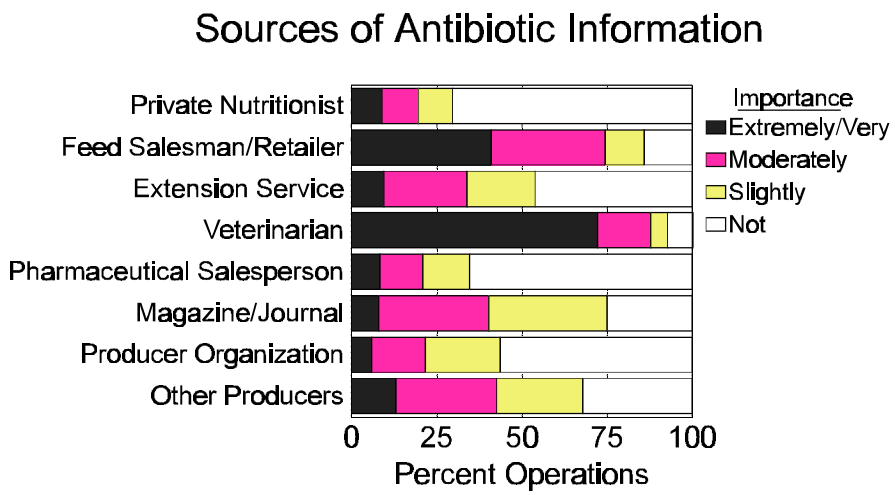
1 Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Carolina, Ohio, Pennsylvania, South Dakota, Tennessee, and Wisconsin.

Swine ‘95 data do not show how many producers fed antibiotics at lower concentrations or fed no antibiotics during the final finishing stage of production. These practices not only lower the cost of the diet, but greatly decrease the possibility of antibiotic residues in premarket hogs.

Figure 2



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Of producers using antibiotics for preventive purposes in grower/finisher rations, 40.0 percent used chlortetracycline, 30.4 percent for tylosin, and 52.1 percent for bacitracin. These three were the most frequently used antibiotics and were fed on average for 58.1, 57.4, and 72.2 days, respectively.

Antibiotic Information

Swine ‘95 indicated that **72.1 percent of producers considered the veterinarian an *extremely* or *very* important source of antibiotic information** (Figure 2.) Feed salespersons or retailers rated second highest for antibiotic information with 41.0 percent of the producers considering them *extremely* or *very* important. The majority of producers did not consider private nutritionists, pharmaceutical salespersons, or producer organizations to be important sources of antibiotic information.

Trends in Antibiotic Usage

While comparisons or changes in management of antibiotic use following the NPPC’s 1989 introduction of the PQA program are difficult to assess, NAHMS can provide some information. The 1990 NAHMS National Swine Survey collected information on use of antibiotics for preventive purposes in feed and water that can be compared to Swine ‘95 results. **Use of antibiotics for preventive purposes in feed in breeding females has increased since the 1990 study**, from 39.1 to 45.5 percent of operations. For boars, the practice has increased from 10.9 to 38.4 percent of operations.

Producers selling feeder-size pigs for roasting or cull sows should be mindful of possible use of antibiotics in these animals prior to being sold.

NAHMS collaborators on the Swine ‘95 study included the National Agricultural Statistics Service (USDA); State and Federal Veterinary Medical Officers and Animal Health Technicians; and the National Veterinary Services Laboratories (USDA:APHIS:VS).

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